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Title: LDDATA

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Intended for: Data for Texas A&M Material Science student summer program.

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Author: Thomas Thompson

Abstract: The current data set is load deflection data (Stress vs strain for compression stress and stress vs elongation for tension stress) from a material test. The goal of the test was to characterize this rubber-like material by looking at different variables: sample creation process, anisotropy, temperature, etc. The data will be used with the Texas A&M Online Research Experience for Undergraduates (O-REU) program. This program is joint with LANL. The student is not an official LANL student so they will not be able to access data and documents on the yellow.

The load deflection data set is unclassified and will be sent to the student for analysis. Analysis will include curve fitting, scalar value analysis (stiffness, toughness, etc.) and analysis of variance to determine what variables statistically affect the response while correcting for covariates (temperature soak time and humidity). Data will be stored as Matlab structs and as HDF5 files. Same data, different formats.

Metadata	Description
batchNumber	Sample creation number.
eventNumber	Order of testing.
humidity	Relative Humidity
humidity_units	Units of humidity (%)
loading	load or unload
loadLocation	Axial, Radial.
runNumber	Cycle number of each event. From 1-3.
sampleLocation	Location of the sample where the cubes or dogbones were obtained from.
soakTime	Time at the given temperature.
soakTime_units	Units in minutes
stressType	Tension or Compression
temperature	Temperature in celcius of the event.
validityName	Description of data quality.

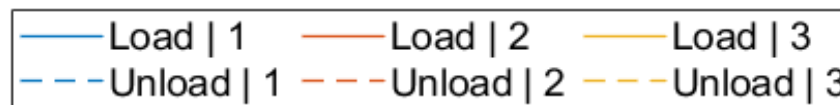
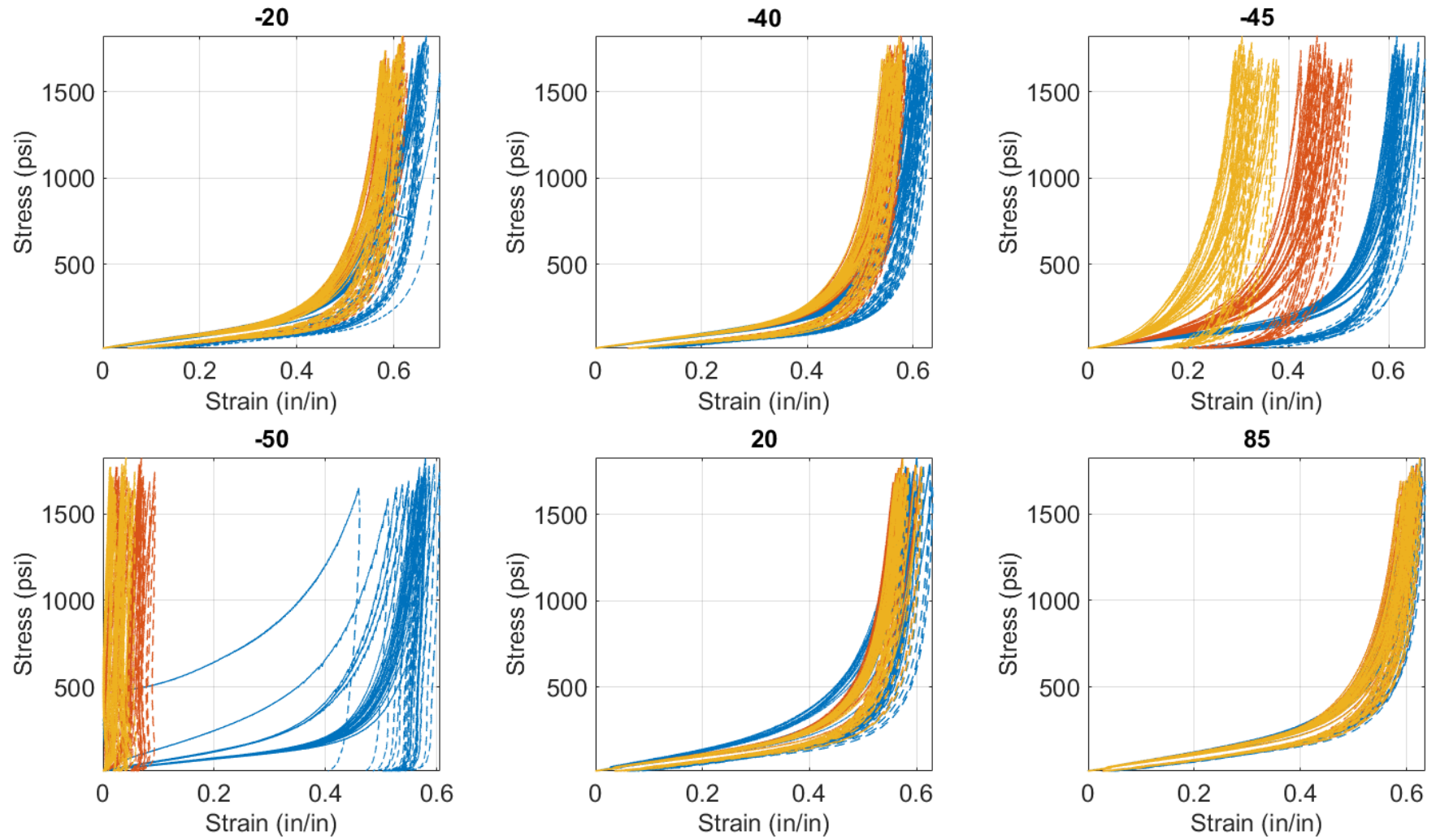
Table 1: List of Metadata labels and Descriptions

batchNumber	loading	loadLocation	runNumber	sampleLocation	stressType	temperature	validityName
1	Load	axial	1	i	compression	-50	verified
2	Unload	radial	2	m	tension	-45	
3			3	mi		-40	
4				mo		-20	
5				o		20	
6						85	
7							
8							

Table 2: List of Metadata Entries

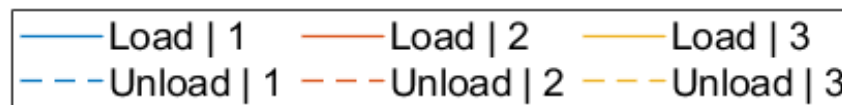
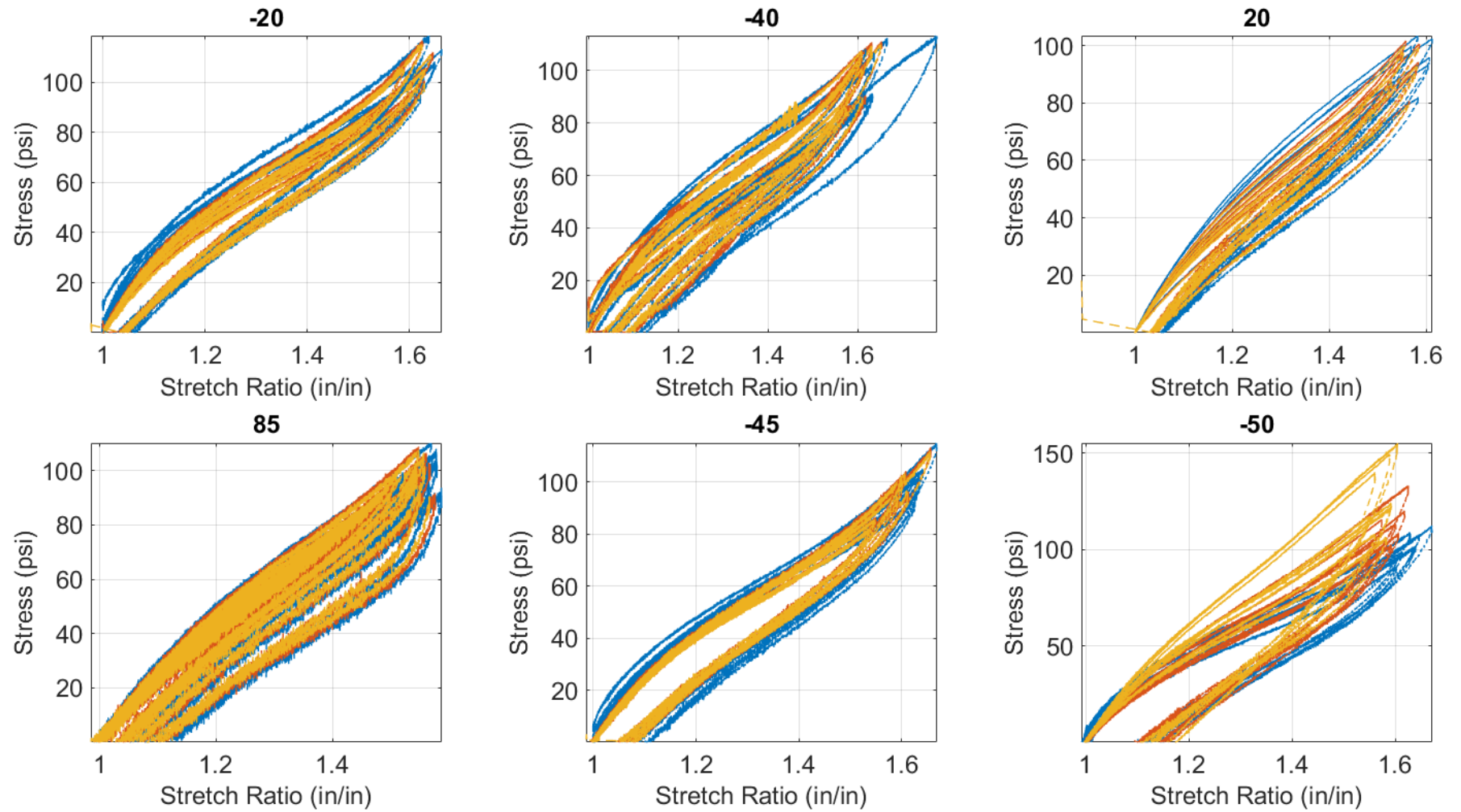
Humidity and soak time were not included because the list is too long. The next two pages show all data. Page 2 is compression color coded by run number, line coded by load or unload and split by temperature. Page 3 is the same but with tension.

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